

**IN THE CLAIMS:**

This listing of claims will replace all prior versions, and listings of the claims in the application.

1.     **(Previously presented)**     An isolated nucleic acid molecule that encodes a protein comprising at least one epitope of membrane IgE and at least one nonIgE helper T cell epitope, and being free of epitopes of serum IgE, wherein said epitope of membrane IgE and said nonIgE helper T cell epitope are fused by a proteolytic cleavage sequence.
2.     **(Previously presented)**     The nucleic acid molecule of claim 1 wherein said protein comprises membrane IgE or fragment thereof.
3.     **(Previously presented)**     The nucleic acid molecule of claim 2 wherein said protein comprises membrane IgE.
4.     **(Canceled)**
5.     **(Previously presented)**     The nucleic acid molecule of claim 1 wherein the coding sequence encoding the at least one non-IgE helper T cell epitope encodes tetanus toxoid Th epitope.
6.     **(Previously presented)**     The nucleic acid molecule of claim 1 wherein said nucleic acid molecule is a plasmid.
7.     **(Previously presented)**     The nucleic acid molecule of claim 1 wherein said nucleic acid molecule is incorporated in a viral vector or a bacterial cell.
8.     **(Previously presented)**     A vaccine composition comprising a nucleic acid molecule that encodes a protein comprising an IgE leader sequence and at least one epitope of membrane

IgE and being free of epitopes of serum IgE, and a pharmaceutically acceptable carrier or diluent.

9-21 (Cancelled)

22. (Previously presented) A host cell comprising an isolated nucleic acid molecule that encodes a protein comprising at least one epitope of membrane IgE and at least one nonIgE helper T cell epitope, and being free of epitopes of serum IgE, wherein said epitope of membrane IgE and said nonIgE helper T cell epitope are fused by a proteolytic cleavage sequence.

23 (Previously presented) The host cell of claim 22 wherein said protein comprises membrane IgE or fragment thereof.

24 (Previously presented) The host cell of claim 22 wherein said protein comprises membrane IgE.

25. (Cancelled)

26. (Previously presented) The host cell of claim 22 wherein the coding sequence encoding the at least one non-IgE helper T cell epitope encodes tetanus toxoid Th epitope.

27. (Previously presented) The host cell of claim 22 wherein said nucleic acid molecule is a plasmid.

28 (Previously presented) A method of producing a protein comprising at least one membrane IgE and at least one non-IGE helper T cell epitope and being free of epitopes of serum IgE, wherein said epitope of membrane IgE and said nonIgE helper T cell epitope are fused by a proteolytic cleavage sequence comprising culturing a host cell of claim 22 and isolating said protein expressed thereby.

29. **(Previously presented)** The method of claim 28, wherein the protein is isolated using an antibody that specifically binds to said protein.

30-31. **(Cancelled)**

32. **(Previously presented)** The vaccine of claim 8 wherein said protein comprises membrane IgE or fragment thereof.

33. **(Previously presented)** The vaccine of claim 8 wherein said protein comprises membrane IgE.

34. **(Previously presented)** The vaccine of claim 8 further comprising coding sequence encoding at least one non-IgE helper T cell epitope.

35. **(Previously presented)** The vaccine of claim 34 wherein the coding sequence encoding the at least one non-IgE helper T cell epitope encodes tetanus toxoid Th epitope.

36. **(Previously presented)** The vaccine of claim 8 wherein said nucleic acid molecule is a plasmid.

37. **(Previously presented)** The vaccine of claim 8 wherein said nucleic acid molecule is incorporated in a viral vector or a bacterial cell.

38-49. **(Cancelled)**

50. **(Previously presented)** The isolated nucleic acid molecule of claim 1, further comprising coding sequence encoding an IgE leader sequence.

51. **(Previously presented)** An isolated nucleic acid molecule that encodes a protein comprising an IgE leader sequence and at least one epitope of membrane IgE and being free of epitopes of serum IgE.
52. **(Previously presented)** The isolated nucleic acid molecule of claim 51, further comprising coding sequence encoding at least one nonIgE helper T cell epitope.
53. **(Previously presented)** The isolated nucleic acid molecule of claim 51, wherein said protein comprises membrane IgE or fragment thereof.
54. **(Previously presented w)** The nucleic acid molecule of claim 54, wherein said protein comprises membrane IgE.
55. **(Previously presented)** The nucleic acid molecule of claim 52, wherein the coding sequence encoding the at least one nonIgE helper T cell epitope encodes tetanus toxoid Th epitope.
56. **(Previously presented)** The nucleic acid molecule of claim 51, wherein said nucleic acid molecule is a plasmid.
57. **(Previously presented)** The nucleic acid molecule of claim 51, wherein said nucleic acid molecule is incorporated in a viral vector a bacterial cell.
58. **(Previously presented)** The vaccine composition of claim 34, wherein said at least one epitope of membrane IgE and said at least one non-IgE helper T cell epitope are fused by a proteolytic cleavage sequence.
59. **(Previously presented)** A vaccine composition comprising a nucleic acid molecule that encodes a protein comprising at least one epitope of membrane IgE and at least one non-IgE helper T cell epitope, being free of epitopes of serum IgE, and a pharmaceutically acceptable

carrier or diluent, wherein said at least one epitope of membrane IgE and said at least one non-IgE helper T cell epitope are fused by a proteolytic cleavage sequence.

60. **(Previously presented)** The vaccine composition of claim 59, wherein said protein comprises membrane IgE or fragment thereof.

61. **(Previously presented)** The vaccine composition of claim 59, wherein said protein comprises membrane IgE.

62. **(Previously presented)** The vaccine composition of claim 59, wherein the coding sequence encoding the at least one non-IgE helper T cell epitope encodes tetanus toxoid Th epitope.

63. **(Previously presented)** The vaccine composition of claim 59, wherein said nucleic acid molecule is a plasmid.

64. **(Previously presented)** The vaccine composition of claim 59, wherein said nucleic acid molecule is incorporated in a viral vector or a bacterial cell.

65. **(Previously presented)** The host cell of claim 22, wherein said nucleic acid molecule further comprises a coding sequence encoding an IgE leader sequence.

66. **(Previously presented)** A host cell comprising an isolated nucleic acid molecule that encodes a protein comprising an IgE leader sequence and at least one epitope of membrane IgE, and being free of epitopes of serum IgE.

67. **(Previously presented)** The host cell of claim 66, wherein said nucleic acid molecule further comprising coding sequence that encodes a protein comprising at least one nonIgE helper T cell epitope.

68. **(Previously presented)** The host cell of claim 66, wherein said protein comprises membrane IgE or fragment thereof.
69. **(Previously presented)** The host cell of claim 66, wherein said protein comprises membrane IgE.
70. **(Previously presented)** The host cell of claim 67, wherein the coding sequence encoding the at least one non-IgE helper T cell epitope encodes tetanus toxoid Th epitope.
71. **(Previously presented)** The host cell of claim 66, wherein said nucleic acid molecule is a plasmid.
72. **(Previously presented)** A method of producing a protein comprising an IgE leader sequence and at least one membrane IgE epitope and being free of epitopes of serum IgE comprising culturing a host cell of claim 66 and isolating said protein expressed thereby.
73. **(Previously presented)** The method of claim 72, wherein the protein is isolated using an antibody that specifically binds to said protein.